



NORTH DAKOTA

***Healthcare-Associated
Infections (HAIs)***

PREVENTION PLAN and REFERENCE MANUAL



NORTH DAKOTA
DEPARTMENT *of* HEALTH

Division of Disease Control
2635 E. Main Ave, PO Box 5520
Bismarck, ND 58506-5520
Phone: 701.328.2378 Fax: 701.328.2499

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INTRODUCTION

Healthcare-associated infections (HAIs) are one of the top ten leading causes of death in the United States and are a threat to patient safety. For these reasons, the prevention and reduction of healthcare-associated infections is a top priority.

What is an HAI?

Healthcare-associated infections (HAIs) are infections that patients acquire while receiving treatment for medical or surgical conditions. HAIs occur in all settings of care, including acute care within hospitals and same day surgical centers, ambulatory outpatient care in health-care clinics, and in long-term care facilities such as nursing homes and rehabilitation facilities. The frequency of HAIs varies by location.

HAIs are associated with a variety of causes, including (but not limited to):

- The use of medical devices, such as catheters and ventilators.
- Complications following a surgical procedure.
- Transmission between patients and health-care workers.
- The result of antibiotic overuse.

Four categories of infections account for approximately three quarters of HAIs in the acute care hospital setting:

1. Surgical site infections
2. Central line-associated bloodstream infections
3. Ventilator-associated pneumonia
4. Catheter-associated urinary tract infections

In addition, infections associated with *Clostridium difficile*, Methicillin-resistant *Staphylococcus aureus* (MRSA) and other multi-drug resistant organisms (MDROs) also contribute significantly to the overall problem. The frequency of HAIs varies by location.

According to the Centers for Disease Control and Prevention (CDC), urinary tract infections comprise the highest percentage (34%) of HAIs followed by surgical site infections (17%), bloodstream infections (14%) and pneumonia (13%).¹

In addition to the substantial human suffering exacted by HAIs, the financial burden attributable to these infections is staggering. It is estimated that HAIs incur an estimated \$28 to \$33 billion in excess health-care costs each year.¹

¹ www.ofmq.com/hai

HAI's also are known as nosocomial infections and these infections are a result of treatment in a hospital or a health-care service unit. Infections are considered nosocomial if they first appear 48 hours or more after hospital admission or within 30 days after discharge. These infections are transmitted due to the fact that health-care facilities house large numbers of people who are sick and whose immune systems are often in a weakened state. Moreover, some medical procedures bypass the body's natural protective barriers and medical staff move from patient to patient, thus making themselves a means for spreading pathogens. This patient-to-patient contact emphasizes the importance more than ever for good hand washing hygiene as the number one means for infection control defenses!

HAI's are known as a localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxin(s). There must be no evidence that the infection was present or incubating at the time of admission to the care setting in order to qualify as a health-care acquired infection. Clinical evidence may be derived from direct observation of the infection site or review of information in the patient chart including results of diagnostic studies or other clinical records documentation.

Most of the time observation of infection sites, a doctor's diagnosis of infection derived from direct observation during a surgical operation, endoscopic examination, or other diagnostic studies as well as from clinical judgment may be acceptable criteria for a HAI unless there is compelling evidence to the contrary.

HAI's may be caused by infectious agents from endogenous or exogenous sources.

- **Endogenous sources** are body sites such as the skin, nose, mouth, GI tract or vagina that are normally inhabited by microorganisms.
- **Exogenous sources** are those external to the patient such as patient care personnel, visitors, patient care equipment, medical devices or the health-care environment.

Conditions that are **NOT** infections:

- **Colonization:** The presence of microorganisms on skin, on mucous membranes in open wounds, or in excretions or secretions but are not causing adverse clinical signs or symptoms.
- **Inflammation:** Results from tissue response to injury or stimulation by noninfectious agents, such as chemical.

Infections **NOT** considered HAIs are:

- Infections associated with complications or extensions of infections already present on admission, unless a change in pathogen or symptoms strongly suggests the acquisition of a new infection.
- Infections in infants that have been acquired transplacentally and become evident less than 48 hours after birth (e.g., herpes simplex, toxoplasmosis, rubella, cytomegalovirus, or syphilis).
- A reactivation of a latent infection, (e.g., herpes zoster [shingles], herpes simplex, syphilis, or tuberculosis).

Special considerations: Infections occurring in infants that result from passage through the birth canal are considered HAIs.

In response to the increasing concerns and impact of healthcare-associated infections, the North Dakota Department of Health has implemented a voluntary HAI prevention plan program. The plan includes the implementation process, as well as reporting and evaluation procedures. The goal of the plan is to decrease HAIs in the health-care facilities, which will increase patient quality care and decrease health-care costs. There is a continuing emphasis on identifying, responding and preventing HAIs in all health-care settings.

The plan will consist of three main components:

1. An ongoing process for developing and enhancing the HAI prevention program
2. Surveillance, detection, reporting and response to HAIs
3. Prevention

ENHANCING THE HAI PREVENTION PROGRAM

The North Dakota Department of Health, Division of Disease Control, has hired on a HAI Activities Coordinator who, with assistance from the HAI Project Coordinator and Senior Epidemiologist, will be responsible for monitoring the state prevention plan.

Under this plan, a steering committee has been developed. Through the formation of this multidisciplinary group, we will establish statewide HAI prevention leadership to work on collaboration and networking throughout the state. The steering committee consists of the HAI Project Coordinator and Activities Coordinator, Senior Epidemiologist, APIC representative, North Dakota Healthcare Review, BCBS of North Dakota, Medicare/Medicaid, North Dakota Hospital Association, Long Term Care Association, Division of Health Facilities with the Department of Health, North Dakota Critical Access Hospital Quality Network and the representatives from the rural health council.

An Infection Prevention Advisory Committee also has been developed. This multidisciplinary group will be used to generate ideas and will meet with the HAI Activities Coordinator to assist in targeting HAIs to study and set up prevention and monitoring tools to use to acquire continuity and quality outcomes while maintaining confidentiality. Designated members of the group will be considered subject matter experts on HAI prevention. Included in this committee are the Association for Professionals in Infection Control and Epidemiology (APIC) members from the steering committee, as well as members from rural and urban health-care facilities.

The groups, using data gathered and evaluated, will develop education campaigns to help with training in an effort to decrease HAI percentages to provide quality outcomes in the prevention of HAIs.

Facilities will need to communicate with their reference laboratories which HAIs are being targeted for studies. These HAIs will then be handled and reported as current mandatory reportable diseases. Electronic laboratory reporting will be encouraged for faster detection and response to outbreaks. These reference laboratories will work with facilities on identifying emerging resistance in HAI pathogens and investigate as needed to determine outbreak potentials.

Facilities will be encouraged to use infection control software that has the ability to use HealthLevel 7 (HL7) messaging so they are able to submit data to the National Health Safety Network (NHSN). This will ensure uniformity in data collection, leading to accurate interpretation.

HAI Definition Guideline Sites and General Definitions

Acute Care Definitions:

www.cdc.gov/ncidod/dhqp/pdf/nnis/NosInfDefinitions.pdf

Home Health and Hospice Definitions:

www.apic.org/AM/Template.cfm?Section=Definitions_and_Surveillance&Template=/CM/ContentDisplay.cfm&ContentFileID=9898

Long Term Care Definitions:

www.apic.org/Content/NavigationMenu/PracticeGuidance/APIC-SHEA_Guideline.pdf

Reference sites that you may find helpful to the clinical definition material; HAI modules and investigation/Reporting forms as well as patient safety components and toolkits are:

www.cdc.gov/nhsn/pdfs/pscmanual/17pscnosinfdef_current.pdf

www.cdc.gov/nhsn

www/cdc.gov/nhsn/PatientSafety.html

www.cdc.gov/hai/recoveryact

For site specific definitions, see Appendix A.

SURVEILLANCE, DETECTION, REPORTING AND RESPONSE

Targeted HAIs will be appropriate to the facility and the diversity of patients they care for in their facilities.

With assistance from the CDC and Counsel of State and Territorial Epidemiologists (CSTE), the committees will select HAIs to study and have standard metrics with measurable baselines in place for those HAIs being studied. Mechanisms currently in place to protect patient's identity for reportable diseases will be followed and will be expanded to protect facilities and providers.

Standard reporting guidelines for number, size and type of HAIs will be set through guidance of the committees, following guidelines recommended by the CDC/ National Health Safety Network (NHSN). Procedures for reporting outbreaks of HAIs to appropriate agencies will be followed by the North Dakota Department of Health, Division of Disease Control, using current protocols for exchange of information between state and local government partners.

PREVENTION

Timely and accurate monitoring is necessary to gauge progress towards HAI prevention as well as timely communication to those responsible for overall patient care, including ancillary departments that affect infection control.

Facilities will be expected to use prevention guidelines developed by CDC and HICPAC. These guidelines should be implemented into practice for the purpose of preventing HAIs.

The number one line of defense against HAIs is good hand washing practices immediately before and after every patient contact!

For site specific preventions, see Appendix A.

**The prevention lists are not inclusive. Please refer to the websites listed for complete prevention guidelines for infection control specifics for each infection.*

OUTBREAK INVESTIGATION

An outbreak is defined as the occurrence of a specific organism identified infection at a rate greater than that expected within a specific care area and over a defined period of time.

Since hospital stays are a lot shorter than previous years, it is often harder to detect outbreaks. The reason to investigate a recognized potential of an outbreak is to identify the source and eliminate it and prevent further infections.

Often the infection control nurse, a clinician or clinical lab worker will notice an unusual number of cases of an infection and start the process of an investigation.

Steps to investigate a possible outbreak would be:

- Verify the diagnosis and confirm, if possible, with microbiology.
- Document the connection in terms of person, place and time.
- Form a hypothesis of the infection process between the cases including sources and routes of exposure.
- Control the outbreak by increasing preventive measures, including hand hygiene and additional protective barriers, as well as modifying nursing procedures as necessary. If a care device or product is suspected, remove it immediately from use.
- Treat possible exposure as appropriate.
- Communicate as necessary with infection control team, public health, and Department of Health, Division of Disease Control.

Investigation Reports should include the incident leading up to the recognition of outbreak, reports of verified diagnosis and modes of transmission as well as the measures taken to prevent further infections. Also put into plan a future study of the control measures used in each case.

For HAI Investigation Form, see Appendix B.

For HAI Outbreak Investigation Report, see Appendix C.

Roles and Responsibilities During an Outbreak

Facility Infection Control Team: Complete the investigation, documenting all findings and involve the Division of Disease Control, Reference Lab and local public health as deemed necessary.

HAI Prevention Team: Advise and help coordinate investigation of outbreak.

Contact People:

Faye Salzer, HAI Activities Coordinator, Department of Health, Disease Control

Becky Wahl, HAI Project Coordinator, Department of Health, Disease Control

Tracy Miller, State Epidemiologist, Department of Health, Disease Control

Division of Disease Control: They are responsible for overall coordination and technical assistance/consultation for local health departments and health facilities during disease outbreak investigations.

These responsibilities include coordinating surveillance, questionnaire development and interviews, data analysis and ensuring completion of the final report. The department will handle public service information, including handling media inquiries.

Division of Laboratory Services: They are responsible for testing human and environmental samples. They also will provide any needed coordination and technical assistance/consultation for local health departments. This may include assisting in sample collection, providing guidance on shipping and handling, testing of environmental and human samples and reporting findings.

Local Public Health Unit: The unit may be responsible for overall coordination and environmental inspections. This may include facility inspection, coordinating environmental sample collection, questionnaire development and interviews and reporting data to the Division of Disease Control for inclusion into the final report.

If the outbreak is preventable through prophylaxis or vaccination, the Division of Disease Control will help to coordinate the procurement and distribution of the necessary biologics.

CONCLUSION

Healthcare-associated infections are one of the most preventable causes of leading mortality in the U.S. The infections also add a significant economic burden to the health-care system. The Department of Health, in conjunction with experts, have developed this plan to help reduce, prevent and eventually eliminate much of the significant burden to our health systems, communities and individuals of HAIs, thus improving quality of care patients receive in our health-care facilities.

HAI Prevention Plan References

Agency for Healthcare Research and Quality (AHRQ) HAI Tools and Resources

www.ahrq.gov/qual/hais.htm

Agency for Healthcare Research and Quality (AHRQ) Patient Safety Organizations

www.pso.ahrq.gov/

American Journal of Infection Control (AJIC)

www.ajicjournal.org/

Association for Professionals in Infection Control and Epidemiology (APIC)

www.apic.org

CDC Antibiotic/Antimicrobial Resistance

www.cdc.gov/drugresistance/index.html

CDC First State-Specific and National Summary HAI Report

www.cdc.gov/HAI/statesummary.html

CDC HAI

www.cdc.gov/hai/

CDC Healthcare Infection Control Practices Advisory Committee (HICPAC)

www.cdc.gov/hicpac

CDC Injection Safety

www.cdc.gov/injectionsafety/

CDC Medication Safety

www.cdc.gov/medicationsafety/

CDC National Healthcare Safety Network (NHSN)

www.cdc.gov/nhsn

CDC Safe Healthcare Blog

<http://blogs.cdc.gov/safehealthcare/>

Centers for Disease Control and Prevention

www.cdc.gov

Centers for Disease Control and Prevention (CDC) HAI Recovery Act
www.cdc.gov/hai/recoveryact/

CMS Hospital Compare
hospitalcompare.hhs.gov/

Healthcare Infection Control Practices Advisory Committee (HICPAC)
www.cdc.gov/hicpac

HHS Action Plan to Prevent Healthcare-Associated Infections
www.hhs.gov/ophis/initiatives/hai

HHS Consumer Media Campaign: Teaming Up Against HAIs
www.hhs.gov/ash/initiatives/hai/training/index.html

Implementing Long-Term Care Infection Control Guidelines into Practice: A Case-Based Approach
www.annalsoflongtermcare.com/content/implementing-long-term-care-infection-control-guidelines-into-practice-a-case-based-approach

Institute for Healthcare Improvement (IHI)
www.ihl.org/ihl

Johns Hopkins University Quality & Safety Research Group
www.safetyresearch.jhu.edu/QSR/index.asp

The Joint Commission
www.jointcommission.org/

McGreer Article
www.premierinc.com/quality-safety/tools-services/safety/topics/guidelines/downloads/25_itcdefs-91.pdf

National Health Safety Network
www.cdc.gov/nhsn

NHSN and IPPS Rule
www.cdc.gov/nhsn/cms-ippis-rule_training.html

NHSN Manual- Chapter 17
www.cdc.gov/nhsn/PDFs/pscManual/17pscNosInfDef_current.pdf

NHSN Newsletters (May 2009 has secondary BSI algorithm)
www.cdc.gov/nhsn/newsletters.html

NHSN Patient Safety Component

www.cdc.gov/nhsn/PatientSafety.html

NHSN Resource Library

www.cdc.gov/nhsn/library.html

NHSN Training

www.cdc.gov/nhsn/training.html

North Dakota Department of Health, Division of Disease Control

www.ndhealth.gov/disease/hai/

QualityNet

www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetHomepage&cid=1120143435363

Society for Healthcare Epidemiology of America (SHEA)

www.shea-online.org/

State Plans to Address HAIs

www.cdc.gov/hai/HAIstatePlans.html

Appendix A

DEFINITIONS AND PREVENTION MEASURES

Surgical Site Infections

A surgical site infection (SSI) is an infection that occurs after surgery takes place. Common symptoms of a surgical site infection are redness and pain around the surgical site area, drainage of cloudy fluid from the surgical wound and fever.

National Health Safety Network (NHSN) acute care definition states the patient can be inpatient or outpatient and where the surgeon makes at least one incision through the skin or mucous membrane, including laparoscopic approach, AND closes the incision before the patient leaves the operating room. If wires or tubes extrude through the incision the procedure does not meet the criteria of an NHSN operative procedure.

Surgical Site Infection Prevention

www.cdc.gov/ncidod/dhqp/pdf/guidelines/SSI.pdf

- Health-care workers need to clean their hands with soap and water or an alcohol-based hand rub before and after caring for each patient.
- If the patient has hair that is to be removed in the same area as the surgical incision site, immediately before surgery, use electric clippers to remove the hair. DO NOT use a razor.
- Clean your hands and arms up to your elbows with an antiseptic agent just before surgery.
- Clean the skin at the site of surgery with a special soap that kills germs.
- Wear special hair covers, masks, gowns and gloves following sterile procedure guidelines during surgery to keep the surgery area clean.
- Give antibiotics within 60 minutes before the surgery and they should be stopped within 24 hours after surgery.
- Handle dressing changes using aseptic techniques.

Catheter-Associated Urinary Tract Infections

A urinary tract infection (UTI) is an infection in the urinary system, which includes the bladder and/or the kidneys. Germs, bacteria or yeasts do not normally live in these areas but if germs are introduced, an infection can occur.

If a patient has a urinary catheter, germs can travel along the catheter and cause an infection in the bladder or kidney. This is known as a catheter-associated urinary tract infection (CA-UTI).

Catheter-Associated Urinary Tract Infection Prevention

www.cdc.gov/hicpac/pdf/CAUTI/CAUTIguideline2009final.pdf

- Catheters are to be put in only when necessary and they should be removed as soon as possible.
- Only properly trained people should be inserting catheters using sterile technique.
- The skin area where the catheter will be inserted should be cleaned before inserting the catheter.
- Health-care providers must clean their hands using soap and water or an alcohol-based hand rub before and after touching the catheter.
- Avoid disconnecting the catheter and drain tube.
- Keep the bag lower than the bladder.
- The catheter should be secured to the leg to prevent pulling and avoid twisting or kinking the catheter.
- Empty the bag regularly and the drainage spout should not touch anything while emptying the bag.

Catheter-Associated Bloodstream Infections

Central line-Associated Bloodstream Infection (CLABSI) is a bloodstream infection caused by bacteria entering the system through a central line that was or is in place.

A “central line” or “central catheter” is a tube that is placed into a patient and terminates at or close to the heart or in one of the great vessels.

This catheter is often used to draw blood, or give fluids or medications or hemodynamic monitoring. It may be left in place for several weeks.

Catheter-Associated Bloodstream Infection Prevention

www.cdc.gov/mmwr/preview/mmwrhtml/rr5110a1.htm

- Choose a vein where the catheter can be safely inserted and where the risk of infection is small.
- Clean your hands with soap and water or an alcohol-based hand rub before putting in the catheter and before gloving.
- Clean the patient’s skin with an antiseptic cleanser before putting in the catheter, making sure the area is dry before starting the procedure.
- Cover the patient with a sterile sheet
- Wear a mask, cap, sterile gown and sterile gloves when putting in the catheter following sterile technique.
- Apply an antiseptic ointment to the site and a sterile dressing.
- Clean your hands, wear gloves and clean the catheter opening with an antiseptic solution before using the catheter to draw blood or give medications.
- Health-care providers also must clean their hands and wear gloves when changing the bandage that covers the area where the catheter enters the skin.
- Carefully handle medications and fluids using aseptic technique when giving them through the catheter.
- Ask every day if the patient still needs to have the catheter and remove it as soon as it is no longer needed.

VENTILATOR-ASSOCIATED PNEUMONIA

Pneumonia is an infection of the lungs.

A ventilator is a machine that helps a patient breathe by giving oxygen through a tube. This tube may be placed in a patient's mouth, nose or through a hole in the trachea (in the front of the neck).

A ventilator-associated pneumonia (VAP), is a lung infection or pneumonia that develops in a person who is on a ventilator.

Ventilator-Associated Pneumonia Prevention

www.cdc.gov/mmwr/preview/mmwrhtml/rr5303a1.htm

- Keep the head of the patient's bed raised between 30 and 45 degrees unless other medical conditions do not allow this.
- Check the patient's ability to breathe on his or her own every day so that the patient can be taken off of the ventilator as soon as possible.
- Health-care workers need to wash their hands with soap and water or an alcohol-based hand rub before and after touching the patient or ventilator.
- Clean the inside of the patient's mouth on a regular basis.
- Clean or replace equipment between use on different patients.
- Use sterile technique when doing suctioning or tracheal cares.

Clostridium Difficile Infections (CDI)

Clostridium difficile, also known as c-diff, is a bacteria that can cause diarrhea. Most cases of “C. diff” infection occur in patients taking antibiotics. The most common symptoms are watery diarrhea, fever, loss of appetite, nausea and stomach pain and/or tenderness.

C. diff spores can live outside the human body for a very long time and may be found on things in the environment such as bedding, bed rails, bathroom fixtures and medical equipment. The infection can spread from person-to-person on contaminated equipment and on the hands of doctors, nurses, other health-care providers and visitors.

Clinical Methicillin-Resistant Staphylococcus Aureus (MRSA) Infections

And Other Multi-Drug Resistant Organisms (MRDO)

Staphylococcus aureus or “staph” is a very common bacteria that about one out of every three people have on their skin or in their nose. This germ does not cause any problems for most people who have it on their skin, (this is called colonization). But sometimes it can cause serious infections such as skin or wound infections, pneumonia or infections of the blood.

Antibiotics are given to kill staph bacteria when they cause infections. Some staph are resistant, meaning they cannot be killed by some antibiotics. MRSA is a type of staph that is resistant to methicillin antibiotics that are often used to treat staph infections.

Clostridium Difficile and MRSA (Methicillin-Resistant Staphylococcus Aurea)
And other MRDOs (multi-drug resistant organisms) Infection Prevention

www.cdc.gov/Features/ClostridiumDifficile/

www.cdc.gov/mrsa/prevent/healthcare.html

- Clean your hands with soap and water before and after caring for every patient.
- Use Contact Precautions to prevent the spread of germs to other patients:
 - Whenever possible, put the patient in a single room.
 - Health-care providers will wear gloves and a gown when taking care of the patient.
 - Visitors also will be asked to wear gloves and gown.
 - Wash hands after removing gown and gloves before leaving room.
 - Patients should stay in their rooms as much as possible, but may leave to go to other areas of the hospital for treatments and tests.
- Extra attention should be made when cleaning the hospital room and medical equipment used by a patient. Make sure to wash hands when leaving the room.
- Patients should avoid unnecessary antibiotic use.
- BUT, patients should take their antibiotics until gone when prescribed.

NOTE: Patients with C. Difficile:

- Should be reminded of the importance of good hand washing after going to the bathroom and before eating.
- C. Difficile spores do not respond to alcohol hand rubs. Wash hands with soap and water.

NOTE: Patients with MRSA:

- Should be taught to wash their hands well before and after caring for dressings of any kind. They should not share towels or razors with anyone else.
- MRSA patients should wash and dry their clothing and bedding in the warmest water possible.

NURSING HOME RESIDENTS:

Residents need to be evaluated on an individual basis for isolation from group activities. For instance, if a resident has C-diff but is orientated and has formed stools, they can be in group activities with good hand washing technique. This also is appropriate for MRSA residents whose infection source is containable (example would be a wound source with a dry, clean dressing).

Reference materials that you may find helpful include FAQ sheets for each HAI, compendium of strategies to prevent HAIs, a hand hygiene poster, baseline prevention practices assessment tools and environmental evaluation-HAI and isolation guidelines:

www.cdc.gov/HAI/recoveryact/stateResources/toolkits.html

www.cdc.gov/HAI/toolkits/Appendices-Evaluating-Environ-Cleaning.html

www.cdc.gov/handhygiene/download/Hand_Hygiene_poster.pdf

www.cdc.gov/hicpac/pdg/isolation/isolation.2007.pdf

www.cdc.gov/ncidod/dhqp/HAI_shea_idsa.html

www.shea-online.org/about/compendium.cfm

The HAI Prevention Team will help facilities to find subject experts for case consults and coaching as needed.

The goal will be to have facilities reporting timely and accurately for HAI tracking through NHSN. The reports received through NHSN can be used by facilities to track progress on HAI prevention.

Designated staff doing the HAI prevention program in the participating facilities, including data collection and evaluation, will be encouraged to have appropriate training in data collection and software training so there is continuity in statewide data, as well as data validation. This would be monitored by the facilities through a quality control process in place.

APPENDIX B



NORTH DAKOTA
DEPARTMENT of HEALTH

HAI INVESTIGATION FORM

Client Identifying Number: _____ Date Infection noticed: _____

Client Admission Diagnosis/Event Type: _____ Client Age: _____

Admission from: (check one)

- | | |
|--------------------------------------|---|
| <input type="checkbox"/> Home | <input type="checkbox"/> Long Term Care |
| <input type="checkbox"/> ER | <input type="checkbox"/> Home Health |
| <input type="checkbox"/> Surgery | <input type="checkbox"/> Clinic |
| <input type="checkbox"/> ICU | <input type="checkbox"/> Rehab |
| <input type="checkbox"/> Other _____ | |

Signs and Symptoms: (check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Fever (greater than 100.4) | <input type="checkbox"/> Diarrhea/Bloody stools |
| <input type="checkbox"/> Chills | <input type="checkbox"/> Nausea/Vomiting |
| <input type="checkbox"/> Pain/Swelling/Redness/Drainage at site | <input type="checkbox"/> Confirmed Lab and/or X-ray pathology |
| <input type="checkbox"/> Other: _____ | |

Treatment:

Drug	Dosage	Frequency

Possible Exposures and Prevention Activities

Medical Devices

Used: _____

Inserted by whom: _____

Location: _____

Date: _____

Notes: _____

Precautions

Hand washing:

- Review protocol
- Proper procedure protocol observed
- Training in place
- Education in place

Notes: _____

Isolation:

- Review protocols
- Proper isolation protocol observed
- Education in place

Notes: _____

Housekeeping:

- Review of protocols
- Proper procedure protocol observed
- Training in place
- Education in place

Notes: _____

Disinfecting of equipment:

- Review of protocols
- Proper procedure protocol observed
- Training in place
- Education in place

Notes: _____

- Investigation Methods:
 - Review charts
 - Proper procedure protocol observed
 - Appropriate isolation implemented
 - Conduct interviews
 - Lab/X-ray findings
 - Training in place
 - Education in place

Summary Opinion: _____

Investigator signature: _____ Date: _____

APPENDIX C



NORTH DAKOTA
DEPARTMENT of HEALTH

HAI OUTBREAK INVESTIGATION REPORT

Primary Mode of Transmission: (Check only one)

- Person-to-person contact
- Environmental contamination, includes hospital equipment
- Use of medical devices
- Other or unknown _____

Investigation Methods: (Check all that apply)

- Case charts
- Interviews
- Lab and/or x-ray findings of suspected sources
- Other _____

Dates:

Date of first case: _____

Date of last case: _____

Date of suspected initial exposure: _____

Date of suspected last exposure: _____

Date reported to Infection Control Director: _____

Date safety measures/training implemented: _____

Date reported to health authorities: _____

Date reported to CDC: _____

Geographic location:

Unit first case was located: _____

Did case transfer from or to any other location: yes no

If yes, which location(s) _____

Any other cases reported in common locations: yes no

If yes, list cases: _____

Cases:

Primary case number: _____

Probable secondary case numbers: _____

Total cases: _____

Signs and Symptoms: (check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Fever (greater than 100.4) | <input type="checkbox"/> Nausea/vomiting |
| <input type="checkbox"/> Chills | <input type="checkbox"/> Diarrhea/bloody stools |
| <input type="checkbox"/> Redness/drainage/swelling at site | <input type="checkbox"/> Confirmed lab/x-ray pathology |
| <input type="checkbox"/> Pain | |

Sex of cases: (number of total cases for each sex)

- Male: _____
- Female: _____

Age of cases: (total for each)

- | | |
|--|--|
| <input type="checkbox"/> Younger than 1 year _____ | <input type="checkbox"/> 20-49 years _____ |
| <input type="checkbox"/> 1-4 years _____ | <input type="checkbox"/> 50-74 years _____ |
| <input type="checkbox"/> 5-9 years _____ | <input type="checkbox"/> Older than 75 years _____ |
| <input type="checkbox"/> 10-19 years _____ | <input type="checkbox"/> Unknown _____ |

Case ending summaries: (enter number of cases for each category)

Ending in:

- Death: _____
- Extended stay: _____

Transferred to:

- Long Term Care: _____
- Home Health Care: _____

Discharged into the community: _____

Confirmed secondary cases: _____

Mode of Transmission: (total number for each)

Person-to-person: _____

Use of medical devices: _____

Environmental, including

Other/ unknown: _____

hospital equipment: _____

Training given: (note all that apply including dates if available)

- Hand Washing _____
- Personal Protective Equipment _____
- Housekeeping _____
- Cleaning of Equipment _____
- Isolation Procedures _____

Who was involved in the investigation process: (give name and title)

Follow-up measures taken including dates:

Summary of findings:

Signature/Title: _____

Date: _____



HAI Prevention Plan Feedback

(You may return this form to fsalzer@nd.gov)

Name of Facility: _____

Date: _____

What have you found helpful with the HAI Prevention Plan manual:

Things you would like to see addressed by the Steering Committee or Multidisciplinary committee that would improve the HAI Prevention Plan Manual:

Training needs:

Report needs:

Person completing form: _____

Contact information: _____